

**Device comprising organic N-channel semiconductor material**

Title in German: Anordnung mit organischem N-Kanal Halbleitermaterial

Title in French: Dispositif a canal N de matériaux semiconducteurs organiques

**Patent Assignee:**

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**Abstract:**

The invention provides a device comprising an improved n-channel semiconducting film. This film formed consists of a perylene tetracarboxylic acid diimide compound and was deposited onto substrates by vacuum sublimation. Thin film transistor devices comprising such films as the semiconducting channel exhibit a field effect electron mobility greater than  $0.01 \text{ cm}^2/\text{Vs}$ , advantageously greater than  $0.6 \text{ cm}^2/\text{Vs}$ , in film form. These devices were fabricated with a bottom source and drain contact configuration and these contacts were not pretreated. The n-channel compounds are capable of possessing significant volatility, such that vapor phase deposition, where desired, is relatively facile.

**BACKGROUND OF THE INVENTION**

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